VI. "Researches on the Structure, Organisation, and Classification of the Fossil Reptilia. Part IX. Section 2. On the Reputed Mammals from the Karroo Formation of Cape Colony." By H. G. SEELEY, F.R.S. Received January 4, 1894.

(Abstract.)

The author re-examines the remains of *Theriodesmus*, and contests the interpretation of the carpus given by Professor Bardeleben, producing specimens of South African Reptiles in which there is a single bone beneath the radius, as in *Theriodesmus*. This character is shown in a small skeleton, at present undescribed, which the author obtained from Klipfontein, Fraserberg, which he regards as referable to a new genus. Other evidence is produced supporting the interpretation of three bones in the proximal row in the carpus, in a specimen from Lady Frere. The author then compares the forelimb of *Theriodesmus* with that of *Pareiasaurus*, which was obtained subsequently, and arrives at the conclusion that the types of limb are too closely related to be referred to different orders of animals, and therefore that *Theriodesmus* must be transferred from the Mammalia to the Therosuchia.

The skull described as *Tritylodon longævus* is examined, and its close resemblance to the skulls of new Theriodonts is pointed out. The author believes that it shows evidence of possessing both prefrontal and post-frontal bones, which were situate as in Theriodonts, and circumscribed the orbits in the same way; so that, although the post-frontal bones appear to have met in the median line to form a crest, at the back of the frontal, there is no other character in the skull by which it can be distinguished from the skull of a Theriodont. It therefore appears to be reptilian, and thus would make known divided roots to the molar teeth in Reptilia, and a more complicated type of crown than in any Theriodont yet known.

VII. "Researches on the Structure, Organisation, and Classification of the Fossil Reptilia. Part IX. Section 3. On *Diademodon*." By H. G. SEELEY, F.R.S. Received January 12, 1894.

(Abstract.)

The author describes fragments of jaws and teeth from Upper Karroo strata at Wonderboom and Aliwal North, collected by R. D. Kannemeyer and Alfred Brown. They may possibly belong to more